ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

July 12th, 1955
Vol. 13 ... No. 11

Engineer-constructor for the Army Package Power Reactor will be Stone & Webster Engineering Corp., according to Alco Products, Inc., which holds the prime USAEC contract for the job. Alco (formerly American Locomotive Co.), was low Government bidder on the power plant, which is portable and can be disassembled so that its components may be transported by air. To be initially installed at the research and development laboratory of the U. S. Army, the nuclear reactor and steam generator of the Package Plant will be housed in a vapor-tight steel container measuring 36-feet in diameter and 64-feet high. The container can be dismantled for shipping. The reactor, steam generator, heat exchangers, main condenser, and other of the larger components will be supplied by Alco; other components of the plant will be purchased through competitive bidding. (Other BUSINESS NEWS, p. 2 this LETTER.)

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A 50% interest in the Thornburg uranium mine, near Gunnison, Colo., has now been sold to the Murchison brothers, Sid Richardson, and Perry Bass, of Texas, by Vance and Garth Thornburg of Phoenix, Ariz. For the transaction, a new corporation was established known as Gunnison Mining Co. The Thornburg property, which is 22-miles southeast of Gunnison, consists of 32 claims which the Thornburgs bought a year ago for a reported $100,000 and a 15% royalty. Shipments of a rich pitchblende-type uranium ore have been made to the Salt Lake City buying station since last March. (Other FINANCIAL NEWS, p. 3 this LETTER.)

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ATOMIC ENERGY BUSINESS REPORTS...

INDUSTRIAL SALES PROGRAM FOR NUCLEAR RESEARCH REACTORS NOW UNDERWAY:- Convinced that a substantial market exists for nuclear research reactors, General Electric Co., Schenectady, N.Y., is now directing major sales efforts towards industrial, educational, and research organizations. O. B. Falls, Jr., manager of the marketing section of G-E's atomic power equipment department, described the marketing effort as a "seven point research reactor program". The program (which is similar to the engineering follow-through of other responsible reactor manufacturers) includes preparing specifications to meet specific research requirements; assuring proper reactor housing; preparing Hazards Summary report for USAEC; manufacturing reactor on schedule; installing at buyer's location; starting up reactor; and providing reactor maintenance. G-E's sales program will emphasize this comprehensive service in promoting its 30-kw. test reactor; 50-kw. water boiler reactor; 1,000-kw. swimming pool reactor; and 5,000-kw. heavy water reactor.

BRITAIN'S NUCLEAR PROGRAM TO ASSIST INDUSTRY:- A research and advice group to aid industry has now been formed at the Atomic Energy Research Establishment, Harwell, according to Dr. Henry Seligman, chief of the isotopes division there. Dr. Seligman, who made the announcement in London recently, said it will be called the Technological Irradiation Group, and will develop industrial uses for fission products (now by-product waste from the various nuclear reactors operating in Britain) as well as assist industry in taking advantage of new atomic developments. First year expenditures were estimated by Dr. Seligman at approximately £400,000.

Work on radiation sterilization of foods at Harwell was described by Dr. Robert Roberts at the time Dr. Seligman made the announcement. Dr. Roberts said that Harwell had supplied the Royal Navy with irradiated onions and potatoes for submarine crews.

HEAVY WATER TO BE SOLD TO FRENCH GOVERNMENT:- Another nation has become an overseas customer for the U. S.'s output of heavy water, under an agreement now made with the French Government by the United States. For use by the French Atomic Energy Commission, 30-tons of heavy water will be sold during the period 1956-1958 by the U. S. (Previous sales of heavy water had been made by the U. S. to Australia, India and Italy. These export sales reflect the U. S. production capacity for heavy water, which is now producing in excess of U. S. needs.)

REACTOR OPERATORS TO BE LICENSED:- An operating license will now be required for any individual who manipulates the controls of a nuclear reactor, makes decisions for such manipulation, or directs another to do so in his presence. The license will be issued by the USAEC after an operating test and physical examination, will run for two years, and will require a new physical examination at renewal time. A health and safety measure, the new regulation is an effort to prevent the release of dangerous amounts of atomic energy or radioactive material should automatic safety controls be accidentally or deliberately made inoperative.

PATENT RIGHTS BOUGHT BY U. S.:- The USAEC has now paid $400,000 to Dr. Glenn T. Seaborg, Dr. Joseph W. Kennedy, Dr. Arthur C. Wahl, and Dr. E. Segre for "rights, title and interest" in certain inventions in plutonium separation processes they had developed privately prior to their USAEC contract work. All rights in the pending classified patents applications, on these inventions, have now been assigned to the U. S. Government. The inventors had filed an application for an award in January, 1950, and amended it in Dec., 1953. Final OK was given last month.

BIDS ASKED, CONTRACTS AWARDED...on nuclear projects...

BIDS ASKED:- Bids for construction of a cell pressure vessel and water tank, and building to house them, are now asked under inv. no. 401-56-1A by the USAEC at Oak Ridge, Tenn. (The cell is a 24-ft. diameter, by 36-ft. high carbon steel pressure vessel enclosed in a 30-ft. diameter by 49-ft. high carbon steel water tank partially encased in concrete; bottom cell is approximately 35-ft. below the operating floor.) Bid closing date is Aug. 16, 1955.

CONTRACTS AWARDED:- Ralph M. Parsons Co., Los Angeles, Calif., has now received a USAEC contract for architect-engineering at certain facilities of the aircraft nuclear propulsion area at the Arco, Idaho, reactor testing station.

ATOMIC ENERGY FINANCIAL REPORTS...

MERGERS FORM NEW NUCLEAR FIRM:- A new firm known as Nuclear Electronics Corp., New York, which was formed last May to buy and develop other companies in the nuclear, electronic, radiation, and appliance field, is now active. Stockholders of Victoreen Instrument Co., Cleveland, and Olympic Radio & Television, Inc., Long Island City, will now be asked this August to approve merger and consolidation of their companies with Nuclear Electronics. Surviving company will be Nuclear Electronics, which will sell $2.5 million of debentures through a group of underwriters headed by Van Alstyne, Noel & Co., and Barrett, Herrick & Co., Inc. Victoreen, which makes radiation and electronic instruments, and Olympic, which makes domestic radio and television receivers and air conditioners, will be operated as divisions of the parent company. President and director of Nuclear Electronics will be David H. Cogan, former chairman of Victoreen; C. W. Haller, former president of Victoreen, will be a vice-president and director; and Adolphe A. Juviler, chairman of Olympic, will be chairman and treasurer. For the year ended Dec. 31, 1954, Olympic showed a net profit of $256,836 on net sales of $18,350,454. For that same period, Victoreen had a net loss of $197,615 on sales of $1,567,806.

NEW STOCK ISSUE BEING FLOATED BY ATOMIC ENERGY FIRM:- Vitro Corp. of America has now made a new offering of 160,000 shares of its common stock at $23.00 per share through a syndicate headed by Blyth & Co., Inc. Stabilizing action of the syndicate has maintained the stability of Vitro's stock during the offering, which analysts have observed is selling at a high price-earnings ratio. Meanwhile, Vitro, whose activities in the atomic energy field range from research and mining through engineering of complete nuclear facilities, had completed purchase on July 1st of 45% of the stock of Thieblot Aircraft Co., Bethesda, Md., for what Vitro said was close to $1 million. Thieblot is an engineering firm engaged in design, development, and production of component parts for aircraft and ordnance systems for aircraft use. (President of Vitro, J. Carlton Ward, had been president of Fairchild Engine & Aircraft Corp. prior to his ousting by Sherman Fairchild in a proxy contest during which Mr. Fairchild alleged certain deficiencies in management of Fairchild Engine & Aircraft.)

NUCLEAR INSTRUMENT FIRM SHOWS SALES GAINS:- Atomic Instrument Co., Boston manufacturer of nuclear measurement apparatus, has now had the largest six months in its history, for the period ending June 30th, 1955, according to L. W. Cronkhite, president. A gain of 55% over the previous best 6-month period, and a gain for June, 1955 of 21% was recorded by the firm. Mr. Cronkhite attributes a considerable portion of the increase to wide acceptance of Atomic's newest instruments. He points out that Atomic will make delivery on certain special contracts in 1955, and that this will yield important new instruments which Atomic will sell commercially. In addition to its radiation instruments, the firm is active in the fields of industrial controls through low-heat counting techniques, and data processing at super speeds.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Atomic Energy Research at Harwell, by K. E. B. Jay. A popular presentation. 144 pages. --Butterworth Publications, Ltd., 88 Kingsway, London W.C.2 (Eng.) (5s.)

Atomic Radiation Detection & Measurement, by Harold S. Renne. A practical work with theory at a minimum; issued by a publisher specializing in instruction books and manuals for radio servicemen. 200 pages. Catalog no. ADR-1. --Howard W. Samms & Co., Indianapolis, Ind. ($5.00).

Nuclear Reactor & Power Plant Control, by M. A. Schultz. An engineering approach to the physics problems of safely controlling nuclear reactors, alone or with attached power plants. --McGraw-Hill Book Co., New York 36, N.Y.

Facts About Fallout. A popular explanation of the movement of radioactive particles from nuclear or thermonuclear detonations. 16 pages 10¢. No. FCD 1.2:F 19. ..... Health & Safety Problems & Weather Effects Associated With Atomic Explosions. Hearings before Joint Con. Comm. on Atomic Energy. No. Y4. At 7/2:H 34. 20¢. --Supt. of Documents, Wash. 25, D. C.

Glossary of Terms in Nuclear Science & Technology. 194 pages. --American Society of Mechanical Engineers, 29 W. 39th St., New York 18, N.Y. ($5.00).

NEW PRODUCTS, SERVICES & PROCEDURES...for nuclear work...

NEW PRODUCTS:- Mettler Remote Control Balance, for use with radioactive materials, has a capacity of up to 5 kilograms, and is said to be sensitive to plus-or-minus 0.5 milligram. A 14-wire cable 50-feet long (standard equipment) connects the balance to a pushbutton control unit; the cable may be shortened or lengthened. Controlled remotely are such functions as the pan release, arrest, zero adjustment, the various weights, etc. The weighing cabinet of the unit has sliding glass doors which are said to make it relatively easy to insert and remove radioactive samples with a mechanical manipulator. --Fisher Scientific Co., Pittsburgh 19, Pa.

A disaster badge for firemen is now being supplied by this firm, which points out that organizations using radioactive material must be prepared to protect fire fighting personnel against possible radiation in an emergency. These special film badges differ from those for laboratory workers in two major respects: (1) They register from 1 r to 500 r, and (2) The supplier claims they can be stored for at least 4 years without deterioration. --St. John X-ray Laboratory, Califon, N. J.

A filter said to be especially useful for radioactive particles is now being offered by this firm for applications in exhaust ducts, and other discharge points, where atmospheric contamination is a possibility. --Millipore Filter Corp., Watertown, Mass.

What it terms a full line of radiochemicals is now being marketed under the Baker & Adamson label by this chemical firm. The line includes organic and inorganic radioisotopes, deuterated compounds, etc. --General Chemical Div., Allied Chemical & Dye Corp., New York 6, N.Y.

PRODUCT NOTES:- An order from a major rubber company in the U. S. for radioactive gauging equipment, in excess of $100,000 has been received by Isotope Products, Ltd., Oakville, Ontario. The order covers complete gauge installations, at three plants. The instruments were specially designed for a two-calender train producing tire fabric. Four separate measuring heads, each using strontium-90, are used in each installation. (Isotope Products recently set up new branch offices at Buffalo, N.Y.; Edmonton, Elberta; and Montreal, Que. A branch had already been established at Houston, Tex.)

The USAEC has now "formally determined" that uranium-233 is special nuclear material; the determination will be effective upon publication shortly in the Federal Register. (The new determination was necessary since uranium-233 is actually produced by transmuting thorium, and this is not the sense in which it is described in the Atomic Energy Act of 1954.)

Certain rare earth elements which had not been previously available on a commercial basis are to be marketed by Lindsay Chemical Co., Chicago, if the production phase of Lindsay's pilot plant process shows promise, the firm states. Process used was developed by Frank Spedding, at the Ames (Iowa) laboratory of the USAEC. (Lindsay Chemical, largest producer of thorium in the U.S., is a major supplier of the rare earths to the steel industry, etc.)

SERVICES:- A two phase clarification process, developed by Atomic Energy Waste Disposal Service, Oakland, Calif., provides "safe and less costly" disposal of radioactive wastes, the firm claims. The first phase is to separate the solids from the liquid; the second, to adsorb the radioactivity in the liquid. To separate the solids from the liquid, the company uses a vapor-tight hooded continuous vacuum precoat filter, made by Oliver United Filters. After the radioactive liquid is made solid-free in this Oliver filter, it is passed through a cartridge which contains ion exchange resins and which has a steel shield for protection against radiation. The radioactive material, which consists of solids from the Oliver Filter, and the resins which have taken up their maximum in radioactive particles, is then disposed of.

PROCEDURES:- To determine whether a mole is malignant, a simple procedure has now been developed by Franz Bauer, Charles Steffen, and others, of the Univ. of Calif. at Los Angeles Medical Center, and the Los Angeles Veterans Administration Hospital. Radioactive phosphorous is intravenously injected into a patient with a mole suspected of being malignant. Three hours later the radioactivity of the mole and the surrounding tissue is measured. If malignant, the radioactivity of the mole is higher than in the surrounding normal tissue. Seventy cases have so far been correctly diagnosed in this manner.

ATOMIC PATENT DIGEST...latest news in the nuclear field...

PATENTED INVENTIONS AVAILABLE FOR LICENSING:- A new group of 20 patented inventions, owned by the U. S. Government, and developed in the course of USAEC-sponsored research, are now available to U. S. firms and individuals on a royalty-free (non-exclusive) basis. The group comprises: (1) An improved ion source said to have greater efficiency than previous devices in delivering positive ions. No. 2,700,107. (2) Circuitry to receive binary electrical signals of either character and to produce an output signal indicative of the binary character of the input signal. No. 2,700,149. (3) Method of producing ductile, massive vanadium metal from impure vanadium pentoxide. No. 2,700,606. (4) Color responsive radiation sensitive solution, for measuring radiation quantities. No. 2,700,736. (5) Apparatus for coating powdered base materials with radioactive materials. No. 2,702,523. (6) Process of recovering uranium from uranium-vanadium ore. No. 2,703,271. (7) Device for holding in accurate alignment electrodes, or other elements, which will be subjected to a considerable temperature range and possibly also a strong magnetic field. No. 2,703,337. (8) Improved ion source, designed to eliminate the memory effect resulting from incomplete removal of a previous sample. No. 2,703,843. (9) Means for stabilizing voltages in oscillators and amplifiers. No. 2,704,330. (10) Ion producing mechanism. No. 2,704,335. (11) Electrical adder-accumulator which operates in a parallel manner on the digits of numbers to be added. No. 2,705,108. (12) A zirconium base-tin-molybdenum alloy which possesses high tensile strength at elevated temperatures, and other desirable characteristics. No. 2,705,674. (13) Process for the continuous conversion of fluorine to hydrogen fluoride. No. 2,706,676. (14) Method of concentrating beryllium ore. No. 2,707,555. (15) Measuring and controlling a flowing fluid stream composed of components having different densities. No. 2,707,964. (16) Camera timer for synchronizing the photographing of a phenomenon and related information. No. 2,708,148. (17) Neutronic reactor; a disclosure of the basic fundamentals involved in the building and operating of a self-sustaining slow neutron chain reactor employing unenriched uranium. (Work of Fermi & Szilard.) No. 2,708,656. (18) Design and method of operation of the calutron. (Work of E. O. Lawrence.) No. 2,709,222. (19) A new magnetic period mass spectrometer. No. 2,709,750. (20) A novel saturable reactor for controlling an electric current. No. 2,709,791.

PATENT GRANTS TO PRIVATE ORGANIZATIONS:- Calutron ion source comprising (in part) an ionization chamber, and associated circuitry. U. S. Pat. No. 2,712,072 issued June 28th, 1955 to James Sayers, Birmingham, England.

Calutron. Apparatus for scanning a beam of charged particles comprising (in part) an electrode, means for supporting the electrode for rotation about and translation along an axis in a path of the beam to be scanned, and related mechanical and electrical appurtenances. U. S. Pat. No. 2,712,077 issued June 28, 1955 to Stephen M. Duke, Birmingham, England.

Method of neutron well logging, comprising (in part) irradiating the formations penetrated by the well with fast neutrons, detecting those neutrons which are returned by the well, and interpreting the results as an indication of the concentration of specific elements in the formation. U. S. Pat. No. 2,712,081 issued June 28th, 1955; assigned to Well Surveys, Inc., Tulsa, Okla. (Inventors: R. E. Fearon and J. M. Thayer.)

PATENT GRANTS TO GOVERNMENT ORGANIZATIONS:- Temperature control, of material being vaporized. U. S. Pat. No. 2,712,073 issued June 28th, 1955; assigned to United States of America (USAEC). (Inventor: E. V. Martin.)

Electrical control circuit, used in conjunction with an ion source. U. S. Pat. No. 2,712,074 issued June 28th, 1955; assigned to United States of America (USAEC). (Inventor: H. G. Neil.)

Apparatus for separating isotopes of elements. U. S. Pat. No. 2,712,079 issued June 28th, 1955; assigned to United States of America (USAEC). (Inventors: L. P. Hunter.)

Delay line pulse generator. U. S. Pat. No. 2,712,114 issued June 28th, 1955; assigned to United States of America (USAEC). (Inventor: W. R. Aiken.)

Sincerely,

The Staff
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